

ABSTRACT

A multistage interconnect network (MIN) capable of supporting massive parallel processing, including point-to-point and multicast communications between processor modules (PMs) which are connected to the input and output ports of the network. The network is built using interconnected switch nodes arranged in  $2 \lceil \log_b N \rceil$  stages, wherein  $b$  is the number of switch node input/output ports,  $N$  is the number of network input/output ports and  $\lceil \log_b N \rceil$  indicates a ceiling function providing the smallest integer not less than  $\log_b N$ . The additional stages provide additional paths between network input ports and network output ports, thereby enhancing fault tolerance and lessening contention.